INTRODUCTION

This report was prepared by the Montana Department of Public Health and Human Services (DPHHS), Office of Vital Statistics (OVS). The following organizations also provided information: The Montana Central Tumor Registry (MCTR) and the Montana Communicable Disease Program of DPHHS provided information on cancer incidence and communicable diseases. National data on mortality and natality, as well as Montana population estimates, are provided be the National Center for Health Statistics (NCHS) and provide context for interpretation of Montana vital events. The Judicial Case Management System (JCMS) of the Montana District Court System provided marriage and divorce data. The report provides a reference to some of the more frequently used Montana vital and health statistics. Because it is intended primarily for reference, there is limited analysis and interpretation of the data. These reports, and several additional tabulations, are available on the Montana Vital Statistics website: http://www.dphhs.mt.gov/statisticalinformation/vitalstats/index.shtml. More detailed tabulations and analyses are available on request, as time and resources permit. Requests should be directed to the Research Specialist at OVS (444-1756 or bschwartz@mt.gov).

A general discussion of the findings, with descriptive figures, appears on pages 13 through 57. Vital statistics reference tables for 2007 appear on pages 07-1 through 07-65. Where space permits, data for one or more prior years are provided for comparison. A "List of Reference Tables"--starting on page 07-iii --describes each of the reference tables by its contents and location. The naming scheme for these tables is described below.

Beginning Letter	Contents of Reference Table
S	selected (mixed record type) statistics
P	population statistics
B	live birth statistics
D	death statistics
F	fetal death statistics
A	induced abortion statistics
M	marriage statistics
C	cancer incidence statistics
R	reportable (communicable) disease statistics

Records collected by the OVS provide the majority of data for these statistics and tabulations. These records include certificates of birth, death, and fetal death, as well as transcripts of marriage and legally induced abortions. Any other source of data--such as those mentioned above--is cited in the text or table where the data are used.

VITAL REGISTRATION AND DATA COLLECTION

Registration of births, deaths, and fetal deaths is a legal requirement. Birth certificates must be filed with the local registrar within ten days of the event. The attending physician, midwife, or parent must file the certificate in the county in which the birth occurred. Most births and deaths occurring in Montana are registered electronically. Funeral directors or others in charge of disposition of the body are responsible for filing death or fetal death certificates. The certificates must be filed with DPHHS or the county's local registrar no later than ten days after the date the death is discovered. A fetal death certificate must be filed when the fetus weighed 350 grams or more or, if the weight is unknown, when the period of gestation was determined to be 20 weeks or more. Montana vital statistics law makes marriage and marital termination reportable events. Before the tenth day of each month, the clerk of

district court must report all marriages that have occurred, been dissolved, or been invalidated in the county during the preceding month. The Abortion Control Act makes any induced abortion occurring in Montana a reportable event. Facilities performing induced abortions are responsible for reporting to DPHHS within 30 days of the event.

Original copies of fetal death certificates, reports of induced abortion, marriage, and marital termination, and those few birth and death certificates that are not filed electronically, are forwarded to OVS. All birth, death and fetal death certificates are permanently filed with and maintained by the OVS. The office maintains electronic records of all events in Montana's Vital Statistics System.

With the exception of reports of marital termination, which since October 1998 have been collected and edited by the Justice Case Management System (JCMS) and forwarded electronically to this office, OVS staff check all records and reports for accuracy and completeness and, when they are not acquired electronically, code them for data entry. Those data that are not received electronically are key-entered and records of all events, regardless of how they are acquired, are maintained in electronic files. Vital records files contain the legal portions of the certificates and reports. Vital statistics files contain statistical information without identification of individuals.

The OVS designs vital certificate and report forms to meet all legal registration and reporting requirements and to provide statistical data to federal, state, and local government agencies, modifying these forms as information requirements change. The following statistical data on these vital events are available for analysis:

NATALITY (1989-Current Data Year)

- Date, hour, and place of birth.
- Age, race, ancestry, education, and birthplace of the parents; place of residence and marital status of the mother.
- Pregnancy history, including number of prior pregnancies, date and results of last prior pregnancy; date of last normal menses; month in which prenatal care began and number of prenatal visits; medical risk factors of the mother during the pregnancy; tobacco and alcohol use, and weight gain.
- Birth process (including whether the mother was transferred to the hospital), obstetric procedures, complications of labor and delivery, method of delivery, and clinical estimate of gestation.
- Infant's sex, plurality, birth order, birthweight, and APGAR scores; the prophylactic used in the infant's eyes; reported abnormalities and congenital anomalies of the newborn; whether the infant was transferred to another hospital.

MORTALITY (1989- Current Data Year)

- Date, hour, and place of death.
- Decedent's age at death, sex, race, ancestry, education, marital status, birthplace, and place of residence.
- Underlying cause of death; whether an autopsy was performed and, if so, whether results were available when cause of death was determined; if death resulted from an external cause (accident, suicide, or homicide), the circumstances of the injury, including whether it was sustained at work. If death resulted from an injury at work, the industry in which the decedent was employed is recorded. Tobacco use as a contributing cause and pregnancy at or near the time of death. (These last two items are available for data years 2003 and forward only)

FETAL MORTALITY (1989- Data Year)

- Date, hour, and place of delivery.

- Age, race, ancestry, and education of parents; place of residence and marital status of the mother.

- Cause of fetal death; the sex, weight, plurality, birth order, and any anomalies or abnormal conditions of the fetus.

- Significant conditions of the mother, including number of prior pregnancies, date and result of last prior pregnancy; date of last normal menses; month in which prenatal care began; number of prenatal visits; maternal risk factors during the pregnancy--medical conditions, tobacco and alcohol use, and weight gain; clinical estimate of gestation; obstetric procedures; complications of labor and delivery; method of delivery.

MARRIAGE (1993- Data Year)

- Date and place of license issuance; date and place of marriage.

- Age, race, education, birthplace, and residence of the bride and groom.

- Previous marital history, including number of prior marriages and reason for termination of the most recent prior marriage (death or divorce), if applicable.

MARITAL TERMINATION (1993- 1998)

- Date and place of decree; type of termination (dissolution or invalid marriage); legal grounds for invalid marriage; whether the marriage was terminated in tribal or district court.

- Age, race, education, birthplace, and residence of wife and husband.

- Number of this marriage; reason for termination of the most recent prior marriage for each party; date the couple last lived in the same household; length of marriage; and petitioner.

- Number of children born alive of this marriage; number of children under 18 years of age in the household; number of children whose custody was awarded to the wife, husband, both, or another party.

INDUCED ABORTION (1989- Current Data Year)

- Date and place of procedure.

- Age, ancestry, race, education, marital status, birth date, and county of residence of patient.

- Pregnancy history, including date of last normal menses, clinical estimate of gestation, and number and result of prior pregnancies.

- Primary procedure that terminated pregnancy, additional procedures used, and resulting complications.

TECHNICAL OVERVIEW

DATA SOURCES AND LIMITATIONS

DELAY IN REPORTING

This report includes vital records, reports, and transcripts for calendar year 2007 received before July 15, 2008. The number of records received after this latter date is small, and since the use of this "cut off" date is fairly consistent from year to year, the effect of omitted data on trends and patterns is likely to be minimal.

GEOGRAPHIC ALLOCATION

Table titles or footnotes indicate whether Vital Statistics are shown by place of residence or place of occurrence. For example, if a resident of Florida is killed in an automobile accident in Montana, the death is counted as a Montana occurrence but is included in Florida's residence statistics. Births, deaths, and fetal deaths may be tabulated either way. For deaths, the place of residence is the usual state and county of residence of the decedent. For births and fetal deaths, the place of residence of the child is the usual state and county of residence of the mother.

Residence data for births, deaths, and fetal deaths occurring outside Montana are available because of a cooperative, interstate transcript-exchange agreement. All states and the provinces of Canada participate in this agreement under the auspices of the National Association for Public Health Statistics and Information Systems. Interstate data on induced abortions are not available for all states, so all tabulations of abortion data, except those in **Table S-6,** are for Montana occurrences. The resident abortion statistics in this table are incomplete because only in-state occurrences to Montana residents are tabulated.

While we can determine most of the nonresidents marrying in Montana, we do not know how many Montana residents marry outside of the state, nor do we know of residency changes associated with marital terminations. No exchange agreement is in effect for marriages or marital terminations. These tabulations are thus only by Montana occurrence. Data on marital terminations are limited to Montana decrees involving at least one Montana resident and are tabulated as occurrences by the Montana county in which the decree was issued.

CAUSE OF DEATH CERTIFICATION

The medical certification section of the Montana Death Certificate asks for information on the causal and chronological sequence of events leading to death. The attending physician or coroner completes this section of the death certificate. It consists of two parts. Part I is used for reporting the conditions leading directly to death and, for each, the interval between onset of the conditions and death. Part II is for reporting any important diseases or conditions that influenced the course of the illness or trauma unfavorably, thus contributing to the fatal outcome, but that were not related to the immediate cause of death. For example, a medical certification might read as follows:

Part I. Death was caused by:			Duration
Immediate cause	Due to	(a) *postoperative bronchial pneumonia*	*3 days*
	Due to	(b) *lobectomy*	*1 week*
Underlying cause	Due to	(c) *primary cancer of lung*	*1 year*

Part II. Other significant conditions
Hypertensive cardiovascular disease

The causes of death in this report represent the underlying causes derived from the information provided on Parts I and II. In the above example, the underlying cause would be lung cancer. Each condition or cause reported on death certificates is classified according to the International Statistical Classification of Diseases, Injuries, and Related

Health Problems, Tenth Revision, World Health Organization, Geneva, 1992 (ICD-10). The nosologist, the person responsible for coding cause of death, develops an underlying cause using ICD-10 codes and coding procedures developed for nationwide use by NCHS of the Centers for Disease Control and Prevention (CDC), Public Health Services, U.S. Department of Health and Human Services. The ICD-10 code for the death in the illustration above would be C34.9, "malignant neoplasm of bronchus or lung, area or lobe unspecified."

When the underlying cause is a traumatic injury, poisoning, or other adverse effects, this report shows tabulations of deaths according to the nature of the event that led to fatal injury, poisoning, or adverse effect rather than the nature of the event's consequences.

Whenever possible, deaths are classified by the underlying cause reported. Exceptions occur when the underlying cause is not apparent from the certificate and clarification is not available. In these instances, the probable underlying cause is determined using a system of rules developed by NCHS.

MARRIAGE AND MARITAL TERMINATION

Reliance on national marriage and marital termination statistics is limited by differences in data collection and data availability at or below the state level. Marriage, marital termination and residency are defined by the laws of each state. The minimum age for marriage, marriage license requirements, residency requirements for marital termination, acceptable grounds for such termination, and minimum period between marriage and marital termination vary from state to state. These differences can affect the comparability of data from state to state.

Data aggregation is also affected by how data are collected and reported. For most states, including Montana, frequency of marriage is based on marriages performed. For New Mexico, New York City, and some counties of Arizona, data represent licenses issued.

POPULATION ESTIMATES

All rates per 1,000 or per 100,000 population in this report are based on population data provided by the U. S. Bureau of the Census (Census Bureau). For intercensal years (all years not ending with "0"), the Census Bureau uses the Tax Return method (formerly, the Administrative Records Method) to arrive at population estimates. This method includes the use of Vital (birth and death) Records. These estimates refer to the resident population on July 1st of the year indicated.

In recent years, OVS has relied on a special series of annual population estimates—U.S. Census Population Estimates with Bridged Race Categories—produced by NCHS. These estimates are stratified by age, race, and sex to derive statewide fertility rates, abortion rates, and age-specific and age-adjusted mortality rates. OVS uses the latest available updates of these population estimates for such calculations.

RACE

Tabulation of vital events by race is imprecise for several reasons. First, it is difficult to identify a single or predominant race when persons are of mixed ancestry, as is the case for many U.S. citizens. A second difficulty with tabulations by race is that the category assignment is based on the opinion of the informant. As such, it likely does not reflect the same definitions of racial groups from one record to the next.

There are two other areas where racial classifications may lack precision: the "Hispanic" ancestry designation and the grouping of responses into an "Other" category. Hispanic ancestry is reported separately from race. Thus, it may apply to any racial category including "White" and "Native American." The proportion of persons in Montana reported as being of Hispanic ancestry is so small, however, that creating racial categories based on combined racial and Hispanic classifications is unlikely to yield any useful information.
The "Other" category is made up of all individuals not classified in the identified group(s) shown in that table. Those for whom race is not reported are therefore included in the "Other" category in these reference tables. According to

the 2000 Census, more than 90% of Montana's population at the time considered itself white, while indicating no other racial classification. Another two percent of the population considered itself white in combination with some other racial classification, such as African American or American Indian (Native American). Thus, classifying persons of unknown race as "Other" could introduce an unknown, probably slight, bias into statistics calculated from the data in these tables.

While only one race on was previously reported on all vital event records, multiple races are now recorded on live birth, death, fetal death, and induced abortion records. Marriage and divorce forms still contain only single-race items. Beginning with the revised Montana death certificate in 2003, informants were asked whether the decedent belonged to one or more of 14 specific racial groups or any other unspecified race. Similar changes were made to the induced abortion report in 2007 and the live birth and fetal death certificates in 2008. Informants were encouraged to “check one or more races” to indicate what the decedents, parents, or patients considered themselves to be. They were also encouraged to identify any racial or ethnic group or tribal affiliation that applied. OVS examines each of the death records received for the decedent’s national heritage, including affiliation with a known American Indian tribe, and classifies any record with such an affiliation accordingly.

For purposes of tabulating death and abortion records, racial classifications shown in this report are based on a “bridged race” category, in which four racial groups--white, black, American Indian or Alaska native (AI/AN), and Asian and Pacific islander--are reported. Records for which only a single race is reported are assigned a bridged category according to the race the informant provided. NCHS “bridges” those records for which two or more races are reported; a “main” race is assigned using a probabilistic model. Bridged race categories are intended for the calculation of population-based rates. For births and fetal deaths, still reported in the single-race format in 2007, the race of the infant or fetus is defined as the reported race of the mother.

MARITAL STATUS

The mother's marital status is designated "Married" on the birth record if the mother is reported on the birth certificate as married "at birth, conception, or any time in between". Status is designated “Married” on the fetal death certificate if the mother was married "at delivery, conception, or any time in between".

Marital status for death and abortion records is "Married or Separated," "Divorced," "Widowed," or "Single" as described by the informant. The "Divorced" designation on such records includes both marital dissolutions (formerly called divorces) and invalid marriages (formerly called annulments).

LIMITATIONS OF SMALL NUMBERS

The occurrence of vital events is subject to chance variation. For example, a birth at 11:59 P.M. on December 31 would be counted in one year. If the infant had been born two minutes later at 12:01 A.M., the birth would be counted in the following year. This phenomenon is not of great importance for states or counties with large populations, since the relative number of births is not greatly affected by one event. However, for Montana counties, with relatively small populations, the occurrence of an event in one year rather than the next could change the pattern of events and might lead to mistaken conclusions about trends in the county's birth rate.

Rates or trends based on small numbers, perhaps less than 100, must be interpreted with caution. Meaningful conclusions cannot be drawn based on frequencies of less than five. This report provides the frequency and rate in all tables where rates based on small numbers of events may appear so readers can gauge the reliability of these rates for themselves.

Similarly, percentages based on small totals can be misleading. For example, if three of ten births in a county were to mothers aged 18 or 19 years, the distribution of births by mother's age would show that 30% of the county's births were to teenagers. While accurate, this statistic is probably of limited value for making policy.

Tabulating occurrences of an event over a period of several years may reduce the impact of chance variability in rates or percentages based on small numbers. An example is the five-year infant mortality rate shown in **Table D-8** or those displayed in **Figure 11**. OVS has limited the use of multi-year rates in this report because such rates can conceal changes in trends that take place during the multi-year period.

DATA TABULATION AND PRESENTATION

GEOGRAPHIC TABULATION

Birth, death, fetal death, and induced abortion data are tabulated for Montana residents by place of residence and for all vital events occurring in Montana by place of occurrence. All occurrence statistics include events that occurred in Montana to residents of other states. Births, deaths, and fetal deaths that occurred out-of-state to Montana residents are included under resident statistics. Resident statistics on induced abortions include only in-state occurrences.

USE OF RATES AND RATIOS

It is sometimes quite useful to adjust a rate or ratio for factors in the population that may affect the measurement. For instance, mortality rates, expressed as numbers of deaths per 1,000 or 100,000 resident population, can be adjusted to account for the effects of demographic factors that might affect mortality, such as race or age composition of the population. Where such adjustments have been made in this report, that fact is indicated in the title or footnote of the table or graph.

However, most reference tables in this report present rates and ratios that have not been adjusted to account for such factors. In such "crude" rates, the denominator is the estimated state or county population, divided by 1,000 or 100,000, and the numerator is the number of events, not weighted by any factor. Examples of crude rates are given in the DEFINITIONS section below.

DEFINITIONS

This section provides definitions of selected demographic, statistical, and medical terms as they are used in this publication. The terms are listed in alphabetical order. Cause of death, race, marital status, and population estimates, discussed elsewhere in the TECHNICAL OVERVIEW SECTION, are not included here.

ABORTION - the spontaneous or induced termination of a pregnancy, without live birth or unintended death.

ABORTION RATIO - the number of induced abortions reported to the OVS, compared to the number of live births. It is calculated as follows:

$$Abortion\ ratio = \frac{Number\ of\ induced\ abortions}{Number\ of\ live\ births}\ x\ 1{,}000$$

AGE - the calculated or reported age of the person(s) involved in a vital or reportable event. For fetal deaths, parents' reported ages were used. For births, induced abortions, marriages, divorces, and reportable cancers, age was calculated based on reported date of birth and date of the event. For deaths, age was calculated as the number of days between birth and death dates. Age in days was divided by 365.25 and truncated to yield age in years if the decedent was one year old or older. Where the record of the month or day of birth were incomplete or invalid, the month was assumed to be June and the day was assumed to be the 15th for the calculation of age

in years.

AGE-ADJUSTED DEATH RATE - an index number that represents the crude death rate that would occur if the observed age-specific death rates were present in a population with an age distribution identical to that of a standard population. It is derived from several age-specific death rates and used to compare relative mortality risks from one group to another (including comparisons of the resident populations of a single geographic region at different times). Statistically, it is a weighted average of the age-specific rates, with the weights representing the proportionate distribution of age in a hypothetical population. It is possible to adjust death rates for other demographic variables that might influence mortality, such as race, sex, or ancestry. (See AGE-SPECIFIC DEATH RATE below and AGE-ADJUSTED DEATH RATES in the MORTALITY section of the report for more discussion.) It is

calculated in this report by the direct method, using the 2000 U.S. population as the standard population, as follows:

$$Age\text{-}adjusted\ death\ rate = \sum_{i=1}^{11} S_i\, w_i$$

$$where\ S_i = the\ age\text{-}specific\ death\ rate\ for\ the\ i^{th}\ age\ group$$

$$where\ w_i = the\ weight\ of\ the\ i^{th}\ age\ group\ in\ the\ standard\ population$$

AGE-SPECIFIC DEATH RATE – the proportion of deaths in a specific age group, expressed as a number per thousand persons in that age group. The "standard 11" age groups are typically used: 0 years of age, 1 – 4 years of age, 5 – 14, 15 – 24, … , 75 – 84, and 85 years of age or older. It is calculated as follows:

$$Age\ specific\ death\ rate = \frac{Number\ of\ deaths\ within\ the\ age\ group}{Midyear\ population\ of\ the\ age\ group}\ x\ 1{,}000$$

APGAR SCORE - an evaluation of a newborn infant's physical status that assigns numerical values (0-2) to each of five criteria 1) heart rate, 2) respiratory effort, 3) muscle tone, 4) response stimulation, and 5) skin color; a score of eight to ten indicates the best possible condition.

AT-RISK POPULATION - all of the persons to whom a given event could occur. The at-risk or "subject" population is the denominator in a rate calculation. (See the use of "at risk" in the definition of FERTILITY RATE).

BIRTH RATE - the proportion of live births in the total population, expressed as a number per thousand persons in that population. Unless otherwise stated, the birth rate is the annual, crude rate, unadjusted for factors affecting the population. It is calculated as follows:

$$Crude\ birth\ rate = \frac{Number\ of\ live\ births}{Midyear\ population}\ x\ 1{,}000$$

DEATH RATE - the proportion of deaths in the total population, expressed as a number per thousand population. Unless otherwise stated, the death rate is the annual crude rate, unadjusted for factors affecting the population. It is calculated as follows:

$$Crude\ death\ rate = \frac{Number\ of\ deaths}{Midyear\ population} \times 1{,}000$$

EXTREMELY LOW BIRTHWEIGHT - the birthweight of an infant of less than 1,000 grams (about 2 pounds 3.25 ounces).

FERTILITY RATE - the total number of live births as a proportion of the estimated female population at risk, expressed as a number per thousand women in that population. The population at risk of experiencing a birth is all fertile women. The approximation used is all women in the main childbearing ages (15 to 44 years). It is calculated as follows:

$$Fertility\ rate = \frac{Number\ of\ live\ births}{Midyear\ population\ of\ women\ aged\ 15-44} \times 1{,}000$$

FETAL DEATH - the reported birth of a fetus that shows no evidence of life after delivery--that is, no action of the heart, breathing, or movement of voluntary muscles. Montana law requires report of fetal death if the fetus weighed 350 grams or more or, if the weight is unknown, the delivery took place after 20 weeks of gestation. There is no requirement in Montana law to report the delivery of a non-viable fetus with a lower weight.

FETAL MORTALITY RATIO - the number of fetal deaths as compared to the number of live births, expressed as a number per thousand live births. It is calculated as follows:

$$Fetal\ mortality\ ratio = \frac{Number\ of\ fetal\ deaths}{Number\ of\ live\ births} \times 1{,}000$$

FREQUENCY - the number of occurrences of an event or observation; how often an event occurs.

ICD - the International Classification of Diseases code used to classify and report causes of death in vital statistics. This code is revised periodically. The current revision is called the International Statistical Classification of Diseases, Injuries, and Related Health Problems, Tenth Revision, and is published by the World Health Organization. In this report, the code is referred to as ICD-10. (See the "Cause of Death Certification" and "Cause of Death and Conversion to ICD-10" sections of this report for further details).

INCIDENCE - the number of new occurrences of an event within a population during a stated time period for a given number of persons in that population. The time period is assumed to be annual unless otherwise stated. The incidence rate for reportable diseases is expressed as the number of new cases per 100,000 population.

INDUCED ABORTION - a medical or surgical procedure that is intended to terminate a pregnancy without live birth.

INFANT - an individual less than 365 days (one year) old.

INFANT MORTALITY RATE - the number of infant deaths compared to the number of live births in that same period, expressed as a number per thousand live births. It is calculated as follows:

$$Infant\ \ mortality\ \ \ rate = \frac{Number\ \ of\ \ infant\ \ deaths}{Number\ \ of\ \ live\ \ births}\ x\ 1{,}000$$

INVALID MARRIAGE - a marriage deemed never to have been legal; a declaration of invalid marriage was formerly called an annulment.

LIVE BIRTH - the birth of a child who shows evidence of life after complete birth. Evidence of life includes heart action, breathing, or movement of voluntary muscles.

LOW BIRTH WEIGHT - the birth weight for a live-born infant of less than 2,500 grams (about five pounds, eight ounces).

MARITAL DISSOLUTION - legal termination of a valid marriage; a marital dissolution was formerly called a divorce.

MATERNAL DEATH – a death attributable to childbirth or complications of pregnancy, delivery, and the puerperium. Deaths attributable to such causes but occurring more than 42 days after delivery or termination of pregnancy are termed "late maternal deaths."

MATERNAL MORTALITY RATE - the total number of maternal deaths as a proportion of total live births, expressed as a number per hundred thousand live births. It is calculated as follows:

$$Maternal\ mortality\ rate = \frac{Number\ of\ \ maternal\ deaths}{Number\ of\ \ live\ births}\ x\ 100{,}000$$

MEAN - the arithmetic average, obtained by dividing the sum of individual values or scores by the number of values or scores observed. For example, the mean age for six persons aged 9, 10, 12, 13, 13, and 16 is 73 divided by 6, or 12.2 years.

MEDIAN - the midpoint; for our purposes, given a set with an odd number of values, the median is the middle value when arranged in numerical order. For a set with an even number of values, the median is the mean of the two "middle" values. For the example under the definition of MEAN, the median age is 12.5 years.

MODE - the most frequently observed value in a set of values. For the example under the definition of MEAN, the modal age is 13.

NATURAL INCREASE - the excess of births over deaths among residents of an area.

NEONATAL DEATH - a death occurring within the first 27 days of life.

NEOPLASM - a new, abnormal, malignant, or benign growth of tissue that is uncontrolled and progressive. Malignant neoplasms are commonly called cancers.

OUT-OF-WEDLOCK BIRTH RATIO - the number of births to unmarried women as compared to the number of

live births, expressed as a number per thousand live births. It is calculated as follows:

$$Out-of-wedlock\ birth\ ratio = \frac{Number\ of\ live\ out-of-wedlock\ births}{Number\ of\ livebirths}\ x\ 1{,}000$$

PARITY - the condition of a woman with respect to her having borne viable offspring. The parity of this birth is the number of live children the woman has borne, including those born in the current delivery.

PERCENTILE - (as in xxth percentile) a statistic used to describe the dispersion of a set of values. One-quarter of the values in a set are less than or equal to the value of the 25th percentile; one-half are less than or equal to the 50th percentile (or median); etc. The 25th and 75th percentiles are found by counting out to the first quarter and three quarter of the values, respectively. When this count lands between two values in the list, averages can be taken, although any number between the two would suffice. For the example under the definition of MEAN, the 25th percentile is 11 and the 75^{th} percentile is 13.

PERINATAL DEATH - a death occurring near the time of birth. The number of perinatal deaths is the sum of registered fetal deaths and neonatal deaths.

PERINATAL MORTALITY RATE - the number of fetal deaths plus neonatal deaths as compared to the number of deliveries (fetal deaths plus live births), expressed as a number per thousand live births in that population. It is calculated as follows:

$$Perinatal\ mortality\ rate = \frac{Number\ of\ fetal\ deaths + neonatal\ deaths}{Number\ of\ live\ births}\ x\ 1{,}000$$

PLACE OF OCCURRENCE - the location where an event took place, regardless of the usual residence of the person(s) involved.

PLACE OF RESIDENCE - the usual residence of the person(s) involved in a vital event, regardless of the event's place of occurrence. For births and fetal deaths, the mother's usual place of residence. For induced abortions, the usual place of residence of the patient. For deaths, the usual place of residence of the decedent.

PLURALITY - the number of infants born during this delivery.

POST-NEONATAL DEATH - during the first year of life, but after the first 27 days.

PUERPERIUM - the condition of the mother immediately following childbirth.

RATE - the frequency of an event in a population subject to that event, expressed as the frequency of occurrence per unit--generally 1,000 or 100,000--of the subject population. For example, the Montana resident birth rate per 1,000 population is the number of births to Montana resident women for every 1,000 men, women, and children in the Montana population.

RATIO - the comparison of two types of events occurring in a subject population, expressed as a frequency of occurrence per unit of one of the events. For instance, the fetal mortality ratio is the number of fetal deaths per 1,000 live births to resident women. The population, fertile women residing in Montana, is the same for both events, but the events are unlikely to have happened to the same women. Also, the total number of

fertile women is not part of the calculation; the basis for the unit (the denominator) is live births, one of the events.

STAGE AT DIAGNOSIS -The extent to which a cancer has spread when it is first diagnosed. Summary stages for cancer diagnoses are:

In-Situ - An abnormal cell growth that meets the criteria for malignancy but does not invade the basement membrane of the organ involved.

Local - A cancer that is limited to the site of origin. It has not spread beyond the organ.

Regional - A cancer that extends to adjacent organs and/or regional lymph nodes, and appears to have spread no further.

Distant - A cancer that extends beyond adjacent organs and has spread to a distant site or distant lymph node.

Unknown - A cancer for which there is insufficient information available to determine the stage at diagnosis.

STANDARD DEVIATION - a measure of how "spread out" a set of values is, on average, from its mean. A small standard deviation indicates that, on average, the values are tightly grouped around the mean while a large standard deviation indicates that, on average, the values are scattered widely. For the series of values presented for the definition of MEAN, the standard deviation is 2.27. For a set of N values, it is computed as follows:

$$Standard\ deviation = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \mu)^2}$$

where μ *= the mean of the set of N values*

where x_i *= the* i^{th} *value in the set of N values*

SUBJECT POPULATION - see AT-RISK POPULATION.

SURVIVAL RATE - the percentage of people diagnosed with a life-threatening disease and remaining alive as of a stated time period after diagnosis.

THERAPIES - procedures used to treat cancer or other health conditions. The following are therapies for reportable cancers:

Biological Response Modifiers (BRM) Therapy - administration of a chemical that alters the patient's immune system to destroy cancer growth.

Chemotherapy - administration of a drug to destroy cancer cells.

Hormone Therapy- administration of a hormone or steroid drug that destroys cancer by changing the hormone balance of the patient.

Radiation - the transmission of light, short radio waves, ultraviolet light, or x-rays to destroy cancer cells. Radiation may reduce the size, destroy the cancer, or stop growth of the cancer.

Surgery - a partial or total removal of a primary cancer or a metastatic cancer.

VERY LOW BIRTHWEIGHT - the birthweight of an infant of less than 1,500 grams (about 3 pounds 5 ounces).

YEARS OF POTENTIAL LIFE LOST (YPLL) - A measure of the cost of premature deaths that emphasizes deaths of the young by measuring the number of years lost to death before a given age, 75 years in this report. Statistically, YPLL is the difference between a given age and the decedent's age at death, summed for all decedents younger than the given age.